

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): A process for producing a foamable crosslinked polymer, comprising:

polymerizing a mixture comprising

- (A) 30-70 parts by weight of methacrylic acid,
30-60 parts by weight of methacrylonitrile,
0-30 parts by weight of other monomers having vinyl unsaturation,
- (B) 0.01-4.99 parts by weight of tert-butyl methacrylate,
- (C) 0.01-10 parts by weight of blowing agent,
- (D) 0.01-10 parts by weight of crosslinking agent,
- (E) 0.01 to 2 parts by weight of a polymerization initiator[[s]], and
- (F) 0 to 20 parts by weight of a conventional additive[[s]],

in bulk to give a polymer in the form of a sheet;

wherein said sheet is optionally subjected to the following treatment:

heat-conditioning and then foaming at temperatures of from 150 to
250°C.

Claim 2 (Canceled):

Claim 3 (Currently Amended): A foamable crosslinked polymer, comprising:

- (A) 30-70 parts by weight of methacrylic acid,
30-60 parts by weight of methacrylonitrile,
0-30 parts by weight of other monomers having vinyl unsaturation,

- (B) 0.01-4.99 parts by weight of tert-butyl methacrylate,
- (C) 0.01-10 parts by weight of blowing agent,
- (D) 0.01-10 parts by weight of crosslinking agent,
- (E) 0.01 to 2 parts by weight of a polymerization initiator[[s]], and
- (F) 0 to 20 parts by weight of a conventional additive[[s]].

Claim 4 (Canceled):

Claim 5 (Currently Amended): A poly(meth)acrylimide foam, ~~wherein the~~ poly(meth)acrylimide foam which is obtained via foaming of a foamable polymer obtained according to the process of Claim 1.

Claim 6 (Previously Presented): A laminated material comprising a layer of a poly(meth)acrylimide foam according to Claim 5.

Claim 7 (Previously Presented): A vehicle, comprising:
the poly(meth)acrylimide foam according to Claim 5;
wherein said vehicle is selected from the group consisting of a motor vehicle, a rail vehicle, a watercraft, an aircraft or a spacecraft.

Claim 8 (Previously Presented): A machine component comprising the poly(meth)acrylimide foam according to Claim 5.

Claim 9 (Previously Presented): An antenna comprising the poly(meth)acrylimide foam according to Claim 5.

Claim 10 (Previously Presented): An X-ray table comprising the poly(meth)acrylimide foam according to Claim 5.

Claim 11 (Previously Presented): A loudspeaker comprising the poly(meth)acrylimide foam according to Claim 5.

Claim 12 (Previously Presented): A pipe comprising the poly(meth)acrylimide foam according to Claim 5.

Claim 13 (Currently Amended): The process for producing the foamable crosslinked polymer[[s]] according to Claim 1, wherein said sheet is heat-conditioned and foamed.

Claims 14-19 (Canceled):

Claim 20 (Canceled):

Claim 21 (Canceled):

Claim 22 (New): The process for producing the foamable crosslinked polymer according to Claim 1, comprising said foaming to obtain a foam having extremely fine and uniform pore structure.

Claim 23 (New): The process for producing the foamable crosslinked polymer according to Claim 1, wherein said foamable polymer has a molar mass of >600 kDa.

Claim 24 (New): The process for producing the foamable crosslinked polymer according to Claim 22, wherein said foam is a fine-pore foam having a density in the range from 30 to 300 kg/m³.

Claim 25 (New): The foamable crosslinked polymer according to Claim 3, having a molar mass of >600 kDa.

Claim 26 (New): The poly(meth)acrylimide foam according to Claim 5, having extremely fine and uniform pore structure.

Claim 27 (New): The poly(meth)acrylimide foam according to Claim 5, wherein said foamable polymer has a molar mass of >600 kDa.

Claim 28 (New): The poly(meth)acrylimide foam according to Claim 5, wherein said foam is a fine-pore foam having a density in the range from 30 to 300 kg/m³.